Ejercicio14sec1.8grossman2ed.

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determinar si la matriz dada tiene una matriz inversa

$$A = \begin{pmatrix} 1 & 0 & 2 & 3 \\ -1 & 1 & 0 & 4 \\ 2 & 1 & -1 & 3 \\ -1 & 0 & 5 & 7 \end{pmatrix}$$

```
----------------------------------------------------------------------
| Sage Version 3.4, Release Date: 2009-03-11                         |
| Type notebook() for the GUI, and license() for information.        |
----------------------------------------------------------------------
Sage Version 3.4, Release Date: 2009-03-11
```

```
sage]
sage] A=matrix(QQ,[[1,0,2,3],[-1,1,0,4],[2,1,-1,3],[-1,0,5,7]])
sage] A
```

$$\begin{pmatrix} 1 & 0 & 2 & 3 \\ -1 & 1 & 0 & 4 \\ 2 & 1 & -1 & 3 \\ -1 & 0 & 5 & 7 \end{pmatrix}$$

```
sage] A.echelon_form()
```

$$\begin{pmatrix} 1 & 0 & 0 & \frac{1}{7} \\ 0 & 1 & 0 & \frac{29}{7} \\ 0 & 0 & 1 & \frac{10}{7} \\ 0 & 0 & 0 & 0 \end{pmatrix}$$

```
sage] A.inverse
```

```
 <built-in method inverse of
sage.matrix.matrix_rational_dense.Matrix_rational_dense object at 0xa0fc18c>
```

```
sage]
```

como pudimos ver la matriz no tiene inversa en su forma escalonada y no tiene inversa.